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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/586,280

07/18/2006

Tohru Ono

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EXAMINER

VANAMAN, FRANK BENNETT

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3618

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/586,280	Applicant(s) ONO ET AL.	
	Examiner Frank B. Vanaman	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Jan 11, 2010 has been entered.

Status of Claims

2. Claims 1-4 are pending, with claim 5 now being canceled.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ono et al. (US 6,378,637, cited by applicant) in view of Kondo (US PGPub. 2003/0070858, cited by applicant), Chernoff et al. (US 6,843,336, cited previously) and Matsuura et al. (US 5,460,234). Ono et al. (see figure 7) teach a vehicle with a flat vehicle floor (15a) and a surrounding periphery which may be defined as constituting an outward-most extent of a vehicle sill, such as associated with the vehicle doors, and/or structural elements which support the periphery, at least a pair of longitudinally extending floor frame members (14L, 14R) in abutment with- and connected to- the floor portions at least through being in abutting connection with the floor portions, and/or through intervening vehicle components (note that the floor is understood to be connected to the vehicle and would thus be 'joined' to the vehicle, including the frame members), a fuel cell unit (3), an auxiliary unit (2 and/or 8) adjacent one side of the fuel cell in a longitudinal direction of the vehicle and an electrical storage unit (7) adjacent the fuel cell such that the auxiliary unit, fuel cell and electrical storage unit are disposed 'in that order' in a longitudinal vehicle direction, the vehicle additionally including a high voltage component (21, 22) at least one of which (22) being laterally positioned with respect to the storage device, the arrangement including further elements (4, 5) mounted laterally exteriorly of the longitudinal frame elements between the frame elements and external

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periphery of the vehicle, the various components being located 'close to' the floor, to the breadth this limitation is recited, as compared to, for example, elements located proximate the vehicle roof, or elements located away from the vehicle.

The reference to Ono et al. fails to teach that each of the fuel cell, storage unit and auxiliary unit are sandwiched from both sides by vehicle frame cross-members. Kondo teaches that it is well known to provide plural fuel cell-related devices (23, 50, 50) each separately sandwiched between laterally extending vehicle frame members (43) connected to longitudinally extending frame members (42) by pairs of brackets (45) and wherein the cells or related apparatus may be protected by under-cover portions (44). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide each of the fuel cell related elements taught by Ono et al. to each be sandwiched by cross members as taught by Kondo for the purpose of structural compartmentalization (e.g., providing each element with a separate surrounding frame, and to protect the fuel cell components in the event of an unexpected deformation of elements of the vehicle frame (see Kondo at paragraph 0040). Note that cross members connected to the longitudinal members would be 'joined' to the floor to the breadth claimed, at least through the longitudinal members. The modifying reference to Kondo fails to teach that the brackets are connected to undersides of the members, however the repositioning of a support bracket from the top side of a frame member to which it is intended to be attached to an underside constitutes a routine relocation of already taught parts which is well within the skill of the ordinary practitioner, and it would have been obvious to one of ordinary skill in the art at the time of the invention to locate the brackets on an underside of the frame members rather than a top side thereof for the purpose of easily allowing the mounted components to be removed from below the vehicle (note that a floor and vehicle cab elements are positioned above the components, and as such, it would be desirable to make the components removable from below so as to allow repair and/or maintenance and/or replacement to occur without essentially having to disassemble the vehicle cab portions).

The reference to Ono et al. as modified by Kondo fails to teach that each of the fuel cell, storage unit, and auxiliary unit are sandwiched each between separate pairs of

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cross members. Chernoff et al. teaches that it is well known to provide vehicle cross members as member pairs (e.g., see elements 34, 36, 38, 40, etc., figure 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the cross members taught by the modifying reference to Kondo as applied to Ono et al. as respective pairs of cross members as taught by Chernoff et al., for the purpose of reducing solid wall partitioning in the chassis (e.g., note that the cross members taught by Kondo are solid bar elements, while the two-element cross members taught by Chernoff et al. are spaced bar elements which provide access space in between them), the use of the pair of bar elements rather than a single bar element constituting a replacement of one well known structural element with an equivalently functioning pair of well known elements, the replacement serving to facilitate access from section to section (for example for passing tubing or passing wiring during construction of the vehicle, or manual access when repair and/or maintenance is done). Such a replacement would result in each cross member (e.g., those replacing elements 43 in Kondo) constituting a pair of cross members, such that each longitudinally separated region would be definable as extending between separate pairs of cross members.

The reference to Ono et al. as modified by Kondo, and Chernoff et al. fails to specifically teach the use of pairs of brackets connecting the fuel cell unit additionally to the cross members, and wherein the fuel cell is provided with an under covering wherein the first and second pairs of brackets are flanges extending from the under covering. Matsuura et al. teach that it is well known to carry a vehicle power source in a container having an under covering (72, 73) wherein mounting brackets (74, 75, 76, see figure 2) are connected to the under covering and extend upwardly and outwardly to form flanges (e.g., portions 74), the mounting brackets being positioned on both lateral and longitudinal sides of the container, and are connected to both longitudinally extending frame portions as well as laterally extending cross members of the frame (6, 61). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide both longitudinally and laterally located brackets as suggested by the power supply mounting arrangement disclosed by Matsuura et al. for connecting the

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fuel cell to the cross member elements of the vehicle taught by Ono et al. and modified by Kondo and Chernoff et al., rather than just pairs of lateral brackets, for the purpose of distributing the weight of the fuel cell over a larger number of mounting elements, thus beneficially reducing the per-bracket weight load, and/or for the purpose of providing both longitudinal and lateral support for the fuel cell, beneficially reducing the potential of movement of the fuel cell with respect to both lateral and longitudinal directions.

Further, it would have been obvious to one of ordinary skill in the art at the time of the invention to house the fuel cell in a container having an under covering from which the brackets extend, as taught by Matsuura et al., for the well known purpose of providing a lower mounting surface to accommodate the physical mounting of the fuel cell (such as on the interior floor of the container) and/or to allow plural fuel cell components to be accommodated and/or to provide insulation from exterior conditions for the fuel cell in order to improve its operation.

As regards claims 3 and 4, the references to Ono et al. as modified by Kondo, Chernoff et al. and Matsuura et al. fail to specifically teach that the elements mounted exteriorly of the frame portions constitute high voltage components. Ono et al. teach a further embodiment (see figure 2) where the storage unit is larger and extends further in a lateral direction, but fails to specifically teach a location for the high voltage component. Initially, Ono et al. already teach that it is well known to locate further components exteriorly of the longitudinal frame members and interiorly of the peripheral sill (phantom lines 11), and in that the space occupied by the high voltage component in the embodiment of figure 7 would not be available due to the increased size of the storage element, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the high voltage component in the space exterior of the longitudinal frame elements and interior of the periphery so as to allow the accommodation of the larger electrical storage element.

Response to Comments

5. Applicant's comments, filed with the Request for continued examination and amendment have been carefully considered.

As regards the modifying reference to Matsuura et al. (hereafter "Matsuura"), applicant has asserted that the reference does not teach the pairs of brackets as configured to be a flange extending from the under cover. The examiner does not agree. Note the identification of the various parts of Matsuura as set forth in the rejection: "...container having an under covering (72, 73) wherein mounting brackets (74, 75, 76, see figure 2) are connected to the under covering and extend upwardly and outwardly to form flanges (e.g., portions 74), the mounting brackets being positioned on both lateral and longitudinal sides of the container, and are connected to both longitudinally extending frame portions as well as laterally extending cross members of the frame (6, 61)..." This stated relationship may be easily verified by a brief perusal of Matsuura's figures, for example figure 2.

Applicant asserts that "brackets 75 do not extend from the under cover 73" (page 5 of the comments). Firstly, this assertion is wholly unsupported by a showing of facts, and from a brief study of Matsuura's figures, it may easily be seen that elements 75 extend in an upward direction from element 73, which contradicts applicant's assertion. Applicant is hereby explicitly requested to reconcile this assertion with the actual showing in Matsuura, and a reply not treating this issue would be understood to be non-responsive. Secondly, the examiner has not characterized the under cover as consisting of element 73 alone, as may be verified from either the statement of rejection advanced above, the statement of rejection advanced in the previous office action, and the re-quoting of the statement of rejection in the paragraph immediately above this one.

Applicant continues with an assertion that "brackets 75 are not even connected to the under cover" (page 5 of the comments). This assertion, again, is wholly unsupported by a showing of facts, and again, Matsuura rather contradicts this assertion: elements 75 are connected to element 73 through intervening elements 72, 74, 82 and 76. Applicant is hereby explicitly requested to reconcile this assertion with the actual showing in Matsuura, and a reply not treating this issue would be again understood to be non-responsive.

Yet further applicant asserts that the frame portion (6, 61) taught by Matsuura does not extend laterally. Once again, this assertion is wholly unsupported by a showing

of facts, and yet again, Matsuura contradicts this assertion: Element 6 extends both longitudinally and laterally as may be determined from a brief perusal of the plan view as illustrated in figure 7. Applicant is hereby explicitly requested to reconcile this assertion with the actual showing in Matsuura, and a reply not treating this issue would be again understood to be non-responsive.

Applicant is reminded that care should be taken to ensure that assertions purporting to have a factual basis (for example, applicant's assertions regarding the reference to Matsuura) are actually correct, and may be supported by a clear showing of facts. Assertions which appear to contradict the clearly established facts of record (in this case, the actual content of the Matsuura reference) may raise non-trivial questions concerning the correctness of other assertions applicant may have made and assertions which contradict the actual showings of a reference serve to cloud the prosecution.

In response to applicant's arguments against the reference to Matsuura individually as regards limitations shown in the base reference or one or more modifying references, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In general, as regards shifting a mount location for a bracket from a top side of a frame to an underside thereof, Masuyama et al. (cited below) and Mizuno (cited previously) both provide documentary evidence which clearly establishes that one of ordinary skill would be well informed that vehicle components may be mounted to an underside of a frame, rather than a top side, for example to beneficially allow removal of the components without having to disassemble a vehicle floor and cabin in order to gain access to the components or their mountings.

The examiner notes that any amendment and its associated arguments are expected to constitute a full and complete response to the previous office action. See 37 CFR 1.111:

"37 CFR 1.111(b): In order to be entitled to reconsideration or further examination, the applicant or patent owner must reply to the Office action. The

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reply by the applicant or patent owner must be reduced to a writing which distinctly and specifically points out the supposed errors in the examiner's action and must reply to every ground of objection and rejection in the prior Office action. The reply must present arguments pointing out the specific distinctions believed to render the claims, including any newly presented claims, patentable over any applied references. The applicant's or patent owner's reply must appear throughout to be a bona fide attempt to advance the application or the reexamination proceeding to final action. A general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references does not comply with the requirements of this section.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Masuyama et al. (US 5,392,873) teach that it is quite old and well known to mount vehicle accessories to an underside of a structural member rather than a top side.

7. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
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/Frank B Vanaman/
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